

CLAIMS

1. A bridged network system, comprising:
a plurality of nodes;
wherein each node in the plurality of nodes is coupled to communicate with at least one other node in the plurality of nodes;
5 wherein the plurality of nodes comprise a bridge network between external nodes located externally from the plurality of nodes; and
wherein each node of the plurality of nodes is operable to perform the steps of:
receiving a packet, wherein the packet comprises a route indicator field;
responsive to the packet being received prior to a time of failure along a
10 communication link between two of the plurality of nodes, transmitting the packet along a first route in the system to another node in the plurality of nodes; and
responsive to the packet being received after a time of failure along a communication link between two of the plurality of nodes and in response to the route indicator field, transmitting the packet along a second route in the system to another
15 node in the plurality of nodes, wherein the second route differs from the first route and is identified prior to the time of failure.
2. The bridged network system wherein the packet comprises a first packet and wherein each of the plurality of nodes is further operable to perform the steps of:
determining a third route in the system after the time of failure;
receiving a second packet after the first packet; and
5 transmitting the second packet along the third route to another node in the plurality of nodes.
3. The bridged network system of claim 2, and further comprising after the step of receiving the second packet and prior to the step of transmitting the second packet, a step of changing a state of the route indicator field to cause transmission to the third route.

4. The bridged network system of claim 3 wherein the step of transmitting the packet along a first route comprises:

identifying a transmit port in the node that corresponds to a destination address in the packet, wherein the destination address corresponds to a node external from the plurality of nodes; and

5

transmitting the packet via the transmit port to the first route.

5. The bridged network system of claim 4 wherein the step of transmitting the packet along a third route comprises:

identifying a transmit port in the node that corresponds to a destination address in the packet, wherein the destination address corresponds to a node external from the plurality of nodes; and

5

transmitting the packet via the transmit port to the third route.

6. The bridged network system of claim 2 wherein the receiving step comprises a node, adjacent to a failure in the first route, receiving the second packet.

7. The bridged network system of claim 1, and further comprising after the step of receiving the second packet and prior to the step of transmitting the second packet, a step of setting a value of a route indicator field in the second packet to cause transmission to either the first or second route.

8. The bridged network system of claim 1 wherein the step of transmitting the packet along a second route comprises:

identifying a transmit port in the node that corresponds to a receipt port in the node; and

5

transmitting the packet via the transmit port to the second route.

9. The bridged network system of claim 8 wherein the transmitting step is not responsive to a destination address within the packet.

10. The bridged network system of claim 1 wherein multiple ones of the plurality of nodes are operable to receive and transmit the packet along the second route until the packet reaches an egress node in the plurality of nodes.

11. The bridged network system of claim 10 wherein the transmission by each node in the multiples ones of the plurality of nodes:

identifying a transmit port in the node that corresponds to a receipt port in the node; and

5 transmitting the packet via the transmit port to the second route.

12. The bridged network system of claim 1:

wherein a first node in the plurality of nodes that receives a packet from a first external node of the external nodes located externally from the plurality of nodes comprises an ingress node;

5 wherein a second node in the plurality of nodes that is coupled to communicate the packet to a second external node of the external nodes located externally from the plurality of nodes comprises an egress node; and

further comprising a step of, responsive to a node in the plurality of nodes receiving a packet as an ingress node, inserting an address of the ingress node and the
10 egress node into the packet.

13. The bridged network system of claim 12:

wherein the step of transmitting the packet along either the first route or the second route comprises:

5 identifying a transmit port in the node that corresponds to the address of the egress node in the packet; and

transmitting the packet via the transmit port to either the first or second route.

14. The bridged network system of claim 13 wherein the step of transmitting the packet along either the first route or the second route is further responsive to the route indicator field in the packet to cause transmission to either the first route or the second route, respectively.

15. The bridged network system of claim 14 wherein the packet further comprises a field for indicating allowability of an ingress node or a node adjacent a failure to change a state in the route indicator field.

16. The bridged network system of claim 12 wherein the first route and the second route are routes in a plurality of different routes, wherein each route in the plurality of different routes is identified prior to the time of failure.

17. The bridged network system of claim 16 wherein each route in the plurality of different routes is identified by a corresponding and different value in the route indicator field.

18. The bridged network system of claim 16 wherein the packet further comprises a VLAN identifier field operable to identify each different route in the plurality of routes so as to facilitate a broadcast message to all nodes on an identified route.

19. The bridged network system of claim 18 wherein the VLAN identifier field facilitates registration of selected different routes in the plurality of routes.

20. The bridged network system of claim 16 wherein the packet comprises a first packet and wherein each node of the plurality of nodes is further operable to perform the steps of:

- determining a third route in the system after the time of failure;
- 5 receiving a second packet after the first packet; and
- transmitting the second packet along the third route to another node in the plurality of nodes.

21. A bridged network system, comprising:

a plurality of nodes;

wherein each node in the plurality of nodes is coupled to bi-directionally communicate with at least one other node in the plurality of nodes;

5 wherein the plurality of nodes comprise a bridge network between external nodes located externally from the plurality of nodes; and

wherein each node of the plurality of nodes is operable to perform the steps of:

receiving a packet;

responsive to the packet being received prior to a time of failure along a
10 communication link between two of the plurality of nodes, transmitting the packet along a first route in the system to another node in the plurality of nodes; and

responsive to the packet being received after a time of failure along a communication link between two of the plurality of nodes and in response to an indication in a broadcast message received prior to the step of receiving a packet,
15 transmitting the packet along a second route in the system to another node in the plurality of nodes, wherein the second route differs from the first route and is identified prior to the time of failure and in response to the broadcast message indication.
